



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,982	12/12/2000	Casimer M. DeCusatis	POU920000087US1	4653
7590	05/04/2004			
Blanche E. Schiller, Esq. HESLIN & ROTHENBERG, P.C. 5 Columbia Circle Albany, NY 12203				
			EXAMINER HO, DUC CHI	
			ART UNIT 2665	PAPER NUMBER 3
DATE MAILED: 05/04/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/734,982

Applicant(s)

DECUSATIS ET AL.

Examiner

Duc C Ho

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-19,22,25-38 and 40 is/are rejected.
- 7) ☒ Claim(s) 3,20,21,23,24 and 39 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: The U.S. patent applications referred to in page 8 have all acquired U.S. patent numbers. Please update the disclosure accordingly.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2, 4-19, 22, 25-38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gregg et al.(US 5,651,033-in IDS record), hereinafter referred to as Gregg, in view of Mejia (US 6,680,970).

Regarding claim 1, Gregg discloses inter-system data communication channel comprised of parallel electrical conductors that simulates the performance of a bit serial optical communications link.

The receiver side of the self-timed link, fig. 2 receives the clocked transmitted data signal from the drivers (0-3)-fig. 1 in parallel format, potentially via an optical communication links, see col. 1, lines 14-17.

Gregg, however, does not specifically discloses adjusting the clock signal relative to a selected position of at least one data unit of the plurality of data units.

Mejia discloses statistical methods and systems for data rate detection for multi-speed embedded clock serial receivers. In Mejia the clock signal has clock edges that are locked to data transitions of an incoming data stream. The method discriminates between data transitions that occur on odd and even clock edges and determines whether the data transitions occur, on average, on only one of odd or even clock edges, or whether the data transitions occur, on average, on both odd and even clock edges, see col. 3, lines 55-65. Referring to figures 1 (see col. 5, lines 23-60), 5, and 6, see col. 6-line 51 to col. 8-line 57, and col. 8-line 57 to col. 9-line 30. Step 600 sets (corresponding to adjusting) a clock to the higher of two data rates, and step 602 locks the clock edges to the edges of the incoming data.

One skill in the art would recognize the advantage of setting the clock to the data as taught by Mejia into the system of Gregg for aligning the data with the clock signal to control the flow of data.

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ a mechanism setting the clock to the data as taught by Mejia into the system of Gregg so that a clock signal corresponding to its data is aligned such that to provide synchronization to data in a very high speed data communication links as part of an optical fiber link operation.

Regarding claims 2, and 40, please see the rejection of claim 1. In Mejia the recovered clock is used to regulate a flow of the corresponding output data, see figure 5, col. 8, lines 5-56.

Regarding claims 4, and 25-26, please see the rejection of claim 1. In Mejia the recovered clock is used to regulate a flow of the corresponding output data either in serial or data, see figure 5, col. 8, lines 5-56.

Regarding claim 5, please see the rejection of claim 1. Mejia discloses the data transitions that occur on odd and even VCO clock edges (corresponding to determining step of an offset of an edge of the clock signal), see col. 6, lines 16-49.

Regarding claim 6, please see the rejection of claim 1. Mejia discloses the average data transitions that occur on odd and even VCO clock edges, see col. 6, lines 16-49.

Regarding claims 7, and 27, please see the rejection of claim 1. Mejia discloses the setting of clock to the data dynamically in real-time in response to changing data rates.

Regarding claims 8, and 28, please see the rejection of claim 1. In Mejia disclose the timing jitter in col. 3, lines 13-24.

Regarding claims 9, and 29, please see the rejection of claim 1. In Mejia disclose the skew issues in col. 1, lines 47-61.

Regarding claims 10, and 30, please see the rejection of claim 1. In Mejia, the data transition in the middle of pattern 12-fig.1 could be selected.

Regarding claim 11, the claim has similar limitations as claim 19. Therefore, it is rejected under Gregg-Mejia for the same reasons set forth in the rejection of claim 19.

Regarding claims 12, and 31, Gregg discloses a charge couple device such as the unit 62-fig. 3, see col. 3, lines 50-67.

Regarding claims 13, 15, 32, and 34, please see the rejection of claim 1. The setting of the clock to the data of Mejia is applied to the unit 62-fig. 3 of Gregg for regulating the flow of data either in serial or parallel.

Regarding claims 14, and 34, in Gregg the receiving unit –fig. 3 inputting data to a shift register 62 from the STI optical links.

Regarding claims 16, and 35, in Gregg the data units in the STI transmission links should have the same data structure.

Regarding claims 17, 22, and 38, please see the rejection of claim 1. Mejia discloses the phase lock loop to recover the clock signal, see col. 3, lines 1-11.

Regarding claims 18, and 37, these claims have similar limitations as claim 1. Therefore, they are rejected under Gregg-Mejia for the same reasons set forth in the rejection of claim 1.

Regarding claim 19, please see the rejection of claim 18. In Gregg the self-timed interface (STI) links two physical separated systems or node, in which an optical communications link is employed, see col. 1, lines 52-57. If the links employed are optical fibers between the two nodes or systems, the receivers inherently are the optical receivers.

Regarding claim 36, in Gregg the receiver unit-fig. 2 is a part of a transceiver of the communication link.

Regarding claim 41, this claim has similar limitations as claim 1. Therefore, it is rejected under Gregg-Mejia for the same reasons set forth in the rejection of claim 1. Gregg discloses a transmitter in fig.1, and a receiver in figures. 2-3, see col. 2-line 35 to col. 4-line 50.

### ***Allowable Subject Matter***

5. Claims 3, 20-21, 23-24, and 39 are objected to as being independent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Puc (US 6,341,023); Jeddelloh (US 6,101,612); Kurokawa et al.(US 5,349,653); Loeb et al. (US 5,157,530) are cited to show a method for multi-channel communications link receiver having optical components

, which is considered pertinent to the claimed invention.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (703) 305-1332. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

9. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,

Arlington, VA, Sixth Floor (Receptionist).

Patent Examiner



Duc Ho

04-27-04